

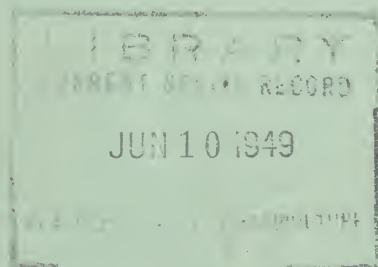
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7 THE SOIL CONSERVATION SERVICE  
ACTION PROGRAM IN  
RANGE MANAGEMENT\*



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## FOREWORD

This bulletin contains a summary and up-to-date policy statement of the range program of the Soil Conservation Service. This address has been reviewed and approved by the Washington office, which gives it the full weight of authority as a national and regional statement. It is recommended for careful reading by all soil conservation technicians.

Cyril Luker  
Regional Conservator

## THE SOIL CONSERVATION SERVICE ACTION PROGRAM IN RANGE MANAGEMENT

Since the current range management program of the Soil Conservation Service has departed in many respects from practices once considered standard, it is fitting that I give you a brief sketch of the evolutionary processes leading up to the present.

Beginning in 1933 and 1934, a number of demonstration projects were established throughout the country to show farmers and ranchers how to control soil erosion and conserve soil and moisture. These projects varied in size from 20,000 to 16,000,000 acres in the Southwest. Demonstration areas in the West embraced public as well as private lands.

It was recognized then, as it is now, that range management was a very definite part of the new science of soil conservation. Therefore, in addition to soil scientists, engineers, and agronomists, the Soil Conservation Service employed

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Address delivered by Robert V. Boyle, Regional Chief of Operations, Soil Conservation Service, Albuquerque, New Mexico, at the organization meeting of the Range Management Society of America at Salt Lake City, Utah, January 31, 1948.

many trained range management technicians in the western part of the Country. Of necessity we drew from the ranks of the Forest Service, the State Experiment Stations, and other agencies. The resulting combination of technicians was both healthy and stimulating, because it represented many different viewpoints.

For the first time in history there was wide scale use of aerial photographs in mapping the range. Blanket range surveys were made more rapidly than ever before over wide areas by using aerial photographs. Since there was formalized cooperation between the Soil Conservation Service and the various land administering agencies, it was possible to make these blanket surveys in spite of the very complicated land ownership pattern in the western states.

At that time nearly all agencies concerned with range management had an abundance of CCC and similar type relief labor. The Soil Conservation Service was no exception. To expedite the use of this labor, there were bountiful amounts of equipment and materials.

In initiating the demonstration work, the cooperation of ranchers was solicited, and partly because of numerous inducements, the program of soil conservation on range lands got under way rather rapidly. It was a government requirement, however, that each cooperating rancher agree to follow a jointly developed management plan for the use of his range and to maintain all structures which were installed under the program. The rancher was also asked to furnish a share of

the materials used in such planned practices as new stock water tanks, spring developments, fencing, trail construction, contour furrows, and re-seeding. These were the popular practices of principal interest to the stockmen, and they were also the practices which made most use of the large labor forces.

At that time little was known about the cost, effect, and feasibility of structural treatment in the control of erosion on range lands. Many thousands of check dams were constructed in barren arroyos and gullies. Diversion dams were built across dry washes to spread ephemeral flood waters over the adjoining range. Detention dams for small scale flood control were constructed. Rock and wire spreaders were numerous, as were earthen dikes. Desilting areas were fenced above stock tanks and there was considerable stream bottom fencing. Range terraces and contour furrows were common, and millions of trees and shrubs were planted.

Intense pressure for haste in providing work for the labor battalions often made it necessary to commence the planned construction before the rancher had sufficient time to accept the recommended principles of range management. Nevertheless, there was a considerable amount of compliance with proper stocking requirements. Some of the ranches covered by our early agreements still stand as excellent examples of range conservation.

Of the structural failures which occurred, many were due to lack of maintenance on the part of the cooperators. All earthen structures and



many masonry and concrete structures needed periodic maintenance, and without it they went to pieces. One reason for lack of maintenance was that the cooperators did not contribute sufficiently to the cost, and in some instances they were not entirely sold on the worth of the structure. Under these circumstances it was only natural that these ranchers neglected maintenance. Some other structural failures were due to faulty range management. Construction is no substitute for good management.

Between 1937 and 1941 there occurred a transition period in the type of action program of the Soil Conservation Service. The most revolutionary development was the beginning of the soil conservation district movement. Numerous states, one after the other, adopted soil conservation district enabling acts. Another development during the period, about which you will hear more later, was the transfer to the Soil Conservation Service of the submarginal Land Utilization Projects created under the authority of Title III of the Bankhead-Jones Farm Tenant Act. Still another incident was the assignment of responsibility for soil conservation work on Interior Department lands to the agencies of the Department of Interior in accordance with Presidential Reorganization Order No. IV. It was during this period that PWA, WPA and CCC gradually went out out of the picture. As soil conservation districts were created the old demonstration projects were abandoned, one superseding the other.

Also during this period a very significant change in policy took place with respect to range



carrying capacity. For the first several years the Service encouraged ranchers to stock their ranges on the basis of conservative use of the average year's production of forage. However, because of the wide variations in rainfall from year to year and because occasionally one dry year follows another, we found that this idea was all wrong. Consequently, along about 1939 we definitely adopted the policy of encouraging the annual or seasonal adjustment of livestock numbers in accordance with the amount of forage produced that season. So much for the events which led up to the current action range program.

The Service now has two broad range programs, viz., (1) technical assistance to private operators in soil conservation districts, and (2) management of land utilization projects. I shall treat on the districts program first.

The philosophy back of soil conservation districts is that responsibility for initiating and administering a soil and water conservation program must be assumed by local people, primarily the land-owning farmers and ranchers. State laws provide the authority for landowners in an area to organize a soil conservation district. That this democratic process is very much in keeping with the American tradition is indicated by the very rapid growth of the district movement. A soil conservation district is governed by a board of supervisors. If the district's program is deemed adequate, a memorandum of understanding is entered into between the Department of Agriculture and the district. If Soil Conservation Service facilities

are available, a supplemental memorandum of understanding is entered into between the Service and the district.

While neither the Department nor the Service attempts to approve or disapprove the program of a soil conservation district, it must be recognized that before the government can expend money in assisting a district, certain conditions must be met. Among these is the need for the district supervisors to show an appreciation of the real need for rehabilitating range lands by means of proper range management and conservation treatment. Without this there is little likelihood that the district's objectives will ever be attained.

It is well to bear in mind at this point that ranchers who cooperate in the program of the soil conservation district do so voluntarily; there is no coercion whatsoever. The only inducements are (1) availability of heavy equipment in the district, (2) technical assistance by the Soil Conservation Service, and (3) ACP payments of PMA, which cover only a part of the entire cost of structural treatment, seeding and other practices.

It is also well to state at this point that districts are created and cooperators are assisted where there is the greatest interest. It just happens that for a number of reasons the farmers of the West have voted in more districts than have the ranchers, and the Service therefore finds itself in the position of giving much more assistance on farmlands than it is on range lands.

Interest in range conservation is constantly increasing, however, and more and more districts are being formed in the range country. Cooperative agreements are still required in soil conservation districts but they are between the rancher and the district rather than between the rancher and the government. Probably the most important agreement clause is the one which commits the rancher to work with a range technician in jointly developing a management plan, in estimating range carrying capacity, classifying range condition, and checking forage production and utilization.

Among the physical improvements of interest to the rancher are water developments, water spreading, reseeding, and some contour furrowing where adapted. There is some gully control and there is still, here and there, some desilting area fencing. All of this is paid for by ranchers. Note that a great deal of the "heavy" work has been dropped, but what is done is quite readily maintained for the reason that the rancher is sold on the worth of the practices and because he has invested his own money. Because ranchers under one program or another have been building tanks and similar structures for quite a number of years, it goes without saying that such work is fast approaching the saturation point.

Such is not the case with range reseeding, however. That practice is of increasing interest in certain localities, especially where it is necessary to eradicate sagebrush. Soil conservation districts are in position to give assistance in reseeding because they can not only

furnish technical guidance but can often furnish specialized seeding equipment. Many districts have purchased seed in large quantities at relatively low cost.

It was previously mentioned that range surveys are being made on aerial photographs. It is also true that the graphic range management plan or land use maps consist of aerial mosaics. These photographs are often of great interest to farmers and ranchers. Many ranchers value them to the extent of tacking them up on the walls of their homes, or in the case of larger operators, they have sometimes framed them and placed them in their offices.

As indicated previously, it is extremely important that opportunity be afforded for the technician and the rancher to work together right out on the range. Ground progress can be observed and recorded on the aerial photos with ease and satisfaction. Opportunity is provided for discussion of deterioration and its causes, site potentialities, and of most importance--methods of improvement.

The basic approach of the Soil Conservation Service in range management is to make practicing conservationists out of range cooperators within districts. We all know that a great many ranchers believe they are conservationists, and quite a few of them actually are, but a large number fall far short for the reason that their yardstick for measuring range use is not based on the requirements of plant growth--on plant physiology. Where this situation is encountered it



is not always enough to work with that rancher on his own range. It is often profitable to take him, and possibly other ranchers, to a range where reserve forage is on the ground, where grass is being managed, where heavier calves are being raised, where percentage calf crop is higher, and where the rancher is himself a conservationist and is willing to spread the gospel.

I believe I am safe in saying that a constantly increasing number of ranchers are coming to recognize that range management technicians in the employ of the Federal government have something to offer. Consequently, interest in range conservation within soil conservation districts is on the increase.

I only have figures for the Southwest Region of the Soil Conservation Service, but they indicate that for the fiscal year 1947, 3,300,000 acres of range were brought under cooperative agreement, whereas in the preceding year the figure was 2,300,000 acres. Another indicator is that during the last fiscal year, 45,000 acres of range were reseeded and that during the previous year only 38,000 acres were reseeded. As might be expected, water developments lost a little ground. I am advised that a somewhat similar trend exists in other western regions. I think there are a number of reasons for this, but certainly one of them is that there is a growing interest on the part of ranchers in genuine range management and conservation.

The foregoing discourse on the Soil Conservation Service approach to range conservation

emphasizes the need for down to earth consideration of the problem. Major considerations are, first, local participation and responsibility in the development of programs. Second, on-site technical assistance. Third, a fair share of rancher financing. You will appreciate, however, that in following through along these lines there are certain practical difficulties.

In the first place, though the ranch country is sparsely settled, there are, nevertheless, a large number of ranchers. When one considers the magnitude of contacting each one of them once or twice a year on his own range, the matter is rather appalling. It is not quite this bad, however, for the reason that no one would be foolhardy enough to attempt to work with all ranchers during a given year. Some of them are already conservationists and need little additional coaching. Others are hopeless diehards. Of the remainder, a certain percentage can be contacted each year. If given an opportunity to work together, it is felt that range technicians and ranchers will be thinking along similar lines within four or five years on the average. This length of time is necessary in order that both good and poor forage production years will be experienced. While a given piece of land may exchange hands during a generation and may be successively owned by conservationists and exploiters, it is felt that in the course of time nearly all ranchers will be reached in accordance with the procedure which I have outlined.

Another factor which should not be ignored is that ranchers are by and large very prosperous



at the present time. Their sons are going to college. The college graduate--especially if he is from an agricultural college--is good conservationist timber.

Aside from the large areas to be covered and the number of ranchers to be contacted, another practical difficulty is that there is a shortage of trained technicians. All men with so-called range training are not temperamentally suited to work on the ground with ranchers. Also, because of necessity, the Soil Conservation Service has had to fill many positions in range country with technicians who do not have the necessary amount of range training. While in-Service training is constantly taking place, it very often falls short of the required amount.

So much for the program within soil conservation districts for the present. Let us take up now the program of the Soil Conservation Service within its Land Utilization projects.

The Service is, to a small degree, a land administering agency. I say small because in most tabulations of public land, the holdings of the Soil Conservation Service are listed under the miscellaneous or "other" column. In round figures, the Service acquired eleven million acres of land. All of this wasn't in the West, of course. Part of this acreage has been transferred to such agencies as the Forest Service and the Indian Service. We still have roughly seven million acres, of which about 6,500,000 acres are used for grazing. By far the greater percentage of this grazing acreage is west of the Mississippi. As is the Service's policy in connection with its larger program, it is

our policy to place the administration of Land Utilization projects in the hands of local organizations, such as soil conservation districts or grazing associations.

About three-fourths of the land which is used for grazing has been turned over to such local organizations for administration under ten year agreements. The Soil Conservation Service retains responsibility for determination of what constitutes proper use, and it, of course, continues a development program of reseeding of abandoned farm land, erection of fences, demolishing of old farmsteads, development of livestock water, etc. The local districts or associations, however, assume responsibility for issuance of permits, collection of fees, settlement of disputes, and like matters.

Relative to the development program just mentioned, I wish I could report more rapid progress. There are still projects with thousands of acres of abandoned farm land awaiting the time when money is made available for reseeding to perennial grasses. There is still need for water development and fencing, and in a few locations, erosion control structures.

I think you can appreciate the position in which the Soil Conservation Service is placed in connection with the administration of these LU lands. Often the same board of supervisors which is responsible for carrying out a soil conservation district program is also responsible for managing the LU project lands. It goes without saying, then, that the Service not only wants to but must practice on its own lands what it preaches

for private lands of district cooperators. In other words, the first task is to attempt to make true conservationists out of the district supervisors or grazing association directors. This can be done only by working with them on the ground singly or in groups, on their own ranges or on the ranges of other ranchers who have already been converted. Once this has been done the task of achieving proper use of government-owned lands becomes much easier.

The next step, of course, is where the technician works with individual users whose permits are for fairly large numbers. In the case of community allotments where there are large numbers of small operators, it is necessary to draw the line often with the supervisors or association directors. You will recall that within districts the attempt is made to achieve adjustment in rate of stocking each season in accordance with the amount of forage produced that year. We can do no less on the lands for which we are directly responsible. As a general rule, forage production and utilization checks are made once a year, usually just before the time to issue new permits. It is noteworthy that such checks, made in company with permittees, seldom result in complaint even if the check points to the need for a seasonal reduction in the rate of stocking.

The procedure here outlined is being applied as rapidly as possible in all Land Utilization projects. We still have to expand this sort of thing in a few places. Looking into the future, we anticipate a situation where nearly all permittees will be as alert to the need for reduced

rate of stocking, where forage production has been subnormal, as they now are to an increase in permitted numbers when above normal amounts of seasonal precipitation occur. There are many land utilization projects where the Service and the users can point with pride to the amount of forage, improved range condition, and to the fact that erosion is being whipped. In addition, the users can point to well conditioned cattle, high percentage calf crops, and increased meat production.

I have made so much of the fact that the Soil Conservation Service approach is through working closely with ranchers on the ground, that I would be at fault if I didn't tell you of a comparatively recent technical development which furthers that end. We definitely have discarded the "standard range survey" with all of its mathematical gymnastics. We no longer expect the rancher to follow, with the technician, each step of a formal survey. Rather, they can more profitably classify the condition of the range and mutually agree, if possible, on departure from what the carrying capacity should be if the given range type were in excellent condition. This gives the rancher a potential to shoot at.

I have already described how we encourage the seasonal or annual adjustment in rate of stocking to conform to the amount of forage produced. That procedure alone removes much of the necessity for painstakingly determining the average carrying capacity. We believe that range surveys are not sufficiently important to justify the time and cost involved in making them on each individual ranch.



It is inevitable that in connection with range condition classification and production and utilization checks the technician and the rancher will deal with plant composition, relative values, volume growth, and similar factors, although these terms may not be used. It was reasoned, therefore, that by eliminating the range survey we would be reducing by a considerable amount these seemingly complex considerations. We are convinced that the conservation job in this country will never be done until the owners and users of the land assume the responsibility for it, that the methods and practices necessary must be understood by farmers and ranchers, and are of such a nature that they will be readily used by them.

Without range survey data, we are finding ranchers responsive to explanations of the fundamental but at the same time simple relationships between grazing use and forage growth, the significance of site differences, how to recognize ranges in different stages of "condition," and what "condition" means to them in terms of forage and meat production. Such knowledge, we find, has greatly stimulated the interest of livestock operators in the problems of management of their range lands, and is gradually leading them to make the necessary decisions in rates of stocking which will bring about range improvement.

Now, just a few additional words on the relationship between this range management society and the action program of the Soil Conservation Service, (and of other agencies for that matter):

Certain other sciences have long been recognized by laymen. Examples are geology, engineering and forestry. These have their societies, and nearly everyone recognizes the fact that when a geologist, for instance, is engaged as a consultant, the fee which that trained technician charges per day is considerable. Good engineers draw large fees also.

It is different among the agricultural professions, with the possible exception of foresters. Because there are rather large acreages of forest land in private ownership, and because some of the timber operators have learned the worth of trained foresters, these professional people here and there enjoy positions not shared by other agricultural scientists. Agronomists, for instance, are for the most part employed by state or federal agencies.

I believe one could count all the private range management consultants on the fingers of one hand. The organization of this Society should do much for building up an appreciation of the fact that range management is a science and that the services of these scientists have a tangible value. In day-to-day tasks of our range technicians, which I have outlined to you here today, there is need for drawing on scientific knowledge, yet in our discussions with the range users we should avoid making it appear that it is difficult to manage the ranges properly. If we do our job well it will be very evident to the intelligent rancher that range technicians can not only diagnose range ills but can prescribe practical remedies.



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